REMARKS

Reconsideration and further examination of the present application is respectfully requested.

Claims 1-17 have been rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 3,184,349 ("Burwen") in view of U.S. Patent No. 3,185,600 ("Dullberg") and further teaching of U.S. Patent Application Publication No. 2001/0035577 ("Akram"). In rejecting the claims, the Office Action on page 2, line 22 - page 3, line states that:

> The Burwen reference discloses the features including the claimed method steps of heating and cryogenic cooling an electronic equipment material (aluminum alloy). ... Burwen does not explicitly disclose said material is a heat sink. However, Akran ... discloses heat sink material includes aluminum, copper, etc. and their alloys. Dullberg ... discloses materials that could be treated by cryogenic cooling. Therefore, it would have been obvious to one having ordinary skill in the art of the cited references at the time the invention was made to recognize the teaching of Burwen could be used for heat treating a heat sink and/or mounting a heat sink.

Applicants respectfully submit, however, that this conclusion of obviousness is improperly drawn in hindsight only after reading Applicants' claims. The Office Action does not point out any teaching or suggestion from Burwen, Dullberg or Akram as to why one of ordinary skill in the art would have been motivated to combine the teachings with Akram in the manner suggested in the Office Action, as required in MPEP § 2143.01.

Burwen teaches a method to quench a heat treated aluminum enclosure which, under normal qucnching procedures, are subject to distortion. Burwen solves the problem of deformation during the strengthening process. Dullberg teaches cryogenic quenching to achieve: "full hardness, strength, and corrosion resistance for heat treatable aluminum alloys, copper alloys, and other heat treatable precipitation-hardening material" in column 2, lines 57-60. Applicants submit that there is no suggestion in the Burwen or Dullberg references that cryogenic quenching of the heat block of Akram would improve the thermal conductivity of the heat block.

While Akram discloses a heat block made of aluminum, copper or their alloy, it does not suggest increasing the thermal conductivity of the heat block. Further, even if Akram had suggested increasing the thermal conductivity of the heat block, as previously submitted, the Burwen and Dullberg references do not teach or suggest that cryogenic quenching of the heat sink would improve the thermal conductivity of a treated material. Therefore, Applicants submit that Akram also fails to teach or suggest combining the teachings of Dullberg and/or Burwen with the teachings of Akram, to cryogenically treat the heat block, as suggested in the Office Action.

Therefore, Applicants respectfully submit that the present invention, as claimed, is patentable over the cited combination of references. Accordingly, Applicants respectfully request removal of this rejection.

The Office Action also states that "since the claimed heat sink has no structure being defined, it reads on the material as disclosed by Burwen." Applicants submit, however, that the term "heat sink" has a generally understood structure to one of ordinary skill in the art, having a surface suitable for thermally coupling with a semiconductor die, as described in the present application, on page 7, lines 1-3. The only structure disclosed in Burwen is described in column 1, lines 48-49, as "an egg crate type of structure of about 8 inches wide, 14 inches long and 1 inch thick," which Applicants submit is not suitable for thermally coupling with a semiconductor die. Accordingly, Applicants submit that the claimed heat sink does not read on the material as disclosed in Burwen.

New claims 18-24 have been added. These new claims are supported in the present application from page 8, line 2, through page 9, line 8. Applicants submit that these new claims are also patentable.

CONCLUSION

Applicants respectfully submit the present application is in condition for allowance, for which early action is earnestly solicited.

The Examiner is invited to telephone the undersigned to help expedite any further prosecution of the present application.

The Director of the U.S. Patent and Trademark Office is hereby authorized to credit any overpayment or to charge any fees or fee deficiencies under 37 C.F.R. § 1.16 and § 1.17 in connection with this communication to our Deposit Account No. 02-2666.

Respectfully submitted,

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